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AMSAT NEWS SERVICE
ANS-358

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The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, the Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

ANS-358 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2023 Dec 24

Happy Holidays from AMSAT News Service

Your AMSAT News Service editors wish all of our readers a merry Christmas and a happy season to all traditions celebrating holidays at this end of the year.

We look forward to continuing to provide you with the most pertinent amateur satellite news and information in the coming year in a new and updated format beginning in January.

73 from
Mark Johns, K0JM, Senior Editor, Minneapolis, Minnesota
Paul Stoetzer, N8HM, Editor and AMSAT Executive Vice President, Washington, DC
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operate it by using the amateur radio band.

+ Optical Camera Mission To take pictures of the Earth and downlink them in 430 MHz band (GMSK, 4,800 bps). The pictures are to be received at control station and general amateur stations are also expected to receive them and report to us as the downlink schedule will be published on our website and social media.

+ Digi-talker Mission 40 to 120 seconds long Digi-talker signal (Voice or SSTV pictures in Robot 36 format recorded before launch) including the call sign and school name will be transmitted from the satellite and be expected that the general amateur stations will receive the signal and report back to us.

High school students with amateur radio license will be engaged in the development of the satellite, and high school students will operate the satellite. These activities will improve the amateur radio and satellite communication skills of the students. The project will also serve as a model case for the development of amateur satellites by the younger generation, and stimulate the interest of the younger generation in amateur radio and satellite communications. The satellite information, such as orbital position and operation time, will be actively disseminated to the world through the website and social media, so that radio amateurs all over the world will have an opportunity to receive image data and digi-talker signals transmitted from the satellite.

A downlink on 435.130 MHz has been coordinated by the International Amateur Radio Union (IARU) for ClarkSat-1. The ClarkSat-1 team requests signal reports sent to "clarksat-1(a)clark.ed.jp". Satellite status reports will be posted on X.com @sat1_AMBITIOUS

[ANS thanks JAXA, Masanobu Tsuji, JA1DAO, and IARU for the above information]

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Other items were relevant to the amateur service and were prioritized beforehand:

AI 1.12: 40 - 50 MHz radar sounders. These are now largely limited to the polar area.

AI 1.14: 231.5 - 252 GHz re-allocations for Earth sensing. Fortunately, our secondary 241 - 248 GHz allocation is unchanged, and the primary allocation of 248 - 250 GHz is unaffected.

AI 9.1a: Space weather sensors was an item of major interest. A clear definition for such sensors was confirmed, with frequency protection being agreed upon as an agenda item for WRC-27.

AI 1.2: More broadband in the 3.3 GHz and 10 GHz bands (in Region 2). This is a difficult challenge, as the amateur services are secondary with numerous (mainly South American) countries allocating mobile broadband by way of footnotes. Instead of a region-wide designation for IMT at 10.0 - 10.5 GHz in Region 2, there is a footnote limited to a dozen countries.

WRC-23 agreed to an agenda for the next conference under AI 10. This AI had an unprecedented number of proposals for WRC-27 and preliminary ones for WRC-31. Following the relatively quick agreement on AI 9.1b, the IARU team switched most of its efforts to the following future proposals to reduce the impact on the amateur services, as numerous amateur bands were under consideration.

WRC-27

The WRC-27 agenda will have 19 items. The following are the most relevant to the amateur services:

1300 - 1350 MHz: A previous proposal for this band, adjacent to 23 centimeters, was suppressed, providing certainty for our secondary allocation.

Space Weather: This potential AI was initially very concerning, as the 0.1 - 20 MHz and 28 and 50 MHz bands were initially under consideration, until concerns were raised, and a team effort resulted in these allocations being removed from the topic.

Lunar Communications: This future agenda item initially included 70 centimeters and other bands where Earth-moon-Earth could be restricted. Fortunately, the UHF aspect of this AI was modified to exclude 430 - 440 MHz.

10 GHz: We were fortunate that this band was withdrawn from another round of consideration for mobile broadband, especially in Region 1.

WRC-31

A record number of preliminary item resolutions were agreed on. The following two are especially relevant:

Wireless Power Transmission (WPT): Both near-field and beamed are being considered as part of the International Telecommunication Union radio regulations, whilst minimizing the impact from interference.

275 - 325 GHz Allocations: This will include an opportunity for the amateur and amateur-satellite service.

The IARU team worked effectively to minimize the amateur bands from future studies, which is a great result for amateur radio.

IARU is very pleased with the overall result of WRC-23. The IARU team has already started to discuss and consider how to engage and resource for the next cycle leading up to WRC-27. IARU WRC Coordinator and Vice President Ole Garpestad, LA2RR, expressed his pleasure with the results and complimented the extraordinary effort of the dedicated team of IARU volunteers who worked long hours to achieve the results that will benefit all amateurs.

The IARU team includes ARRL Technical Relations Specialist Jon Siverling, WB3ERA. WRC-23 ran from November 20 – December 15, 2023.

[ANS thanks International Amateur Radio Union Secretary Joel Harrison, W5ZN, and ARRL News for the above information]

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As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol.

The crossband repeater continues to be active (145.990 MHz up {PL 67} & 437.800 MHz down), but operation has been interrupted due to undocking maneuvers this past week. If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

Upcoming Satellite Operations

None scheduled at this time.

[ANS thanks Ian Parsons, K5ZM, AMSAT rover page manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

+ ARISS 40th Anniversary Conference: Celebrating the Positive Impact of Amateur Radio on Human Spaceflight
Center for Space Education, Adjacent to NASA Kennedy Space Center Visitor's Center, Florida, USA
February 22-24, 2024

[ANS thanks the AMSAT Events page for the above information]

Satellite Shorts From All Over

+ NASA has released a three minute video retrospective of its accomplishments in 2023. The video may be viewed at https://www.youtube.com/watch?v=YQWespzOtzI (ANS thanks NASA for the above information)

+ NASA’s Deep Space Optical Communications experiment beamed an ultra-high definition streaming video on Dec. 11 from a record-setting 19 million miles away (31 million kilometers, or about 80 times the Earth-Moon distance). The demo transmitted the 15-second test video via a cutting-edge instrument called a flight laser transceiver. Uploaded before launch, the short ultra-high definition video features an orange tabby cat named Taters chasing a laser pointer. Taters is the pet of an employee of NASA’s Jet Propulsion Laboratory, and the cat is reported to be totally unimpressed by

the accomplishment. (ANS thanks NASA for the above information)

+ December 6 marked the 25th anniversary of the International Space Station. On Dec. 6, 1998 the first two elements of the station, Unity and Zarya, were mated by the crew of space shuttle Endeavour’s STS-88 mission. Since then, 273 people from 21 countries have visited the station. (ANS thanks The Orbital Index and NASA for the above information)

+ NASA's Mars Rover, Perseverance, recently marked 1,000 "sols" (Martian days) on the red planet, after landing at Jezero Crater on February 18, 2021. It's companion Mars helicopter, Ingenuity, the first robot ever to explore the skies of a world beyond Earth, made its 70th flight on Friday, Dec 22. (ANS thanks The Orbital Index and NASA for the above information)

+ Voyager 1 has stopped returning useful data to Earth due to a problem with the spacecraft's Flight Data System (FDS) computers. It could take several weeks for engineers to develop a new plan to remedy the issue. Launched in 1977, the spacecraft and its twin, Voyager 2, are the two longest-operating spacecraft in history [behind AO-7, that is]. In addition, commands from mission controllers on Earth take 22.5 hours to reach Voyager 1, which is exploring the outer regions of our solar system more than 15 billion miles (24 billion kilometers) from Earth. That means the engineering team has to wait 45 hours to get a response from Voyager 1 and determine whether a command had the intended outcome. (ANS thanks NASA for the above information)

+ A French small rocket project, aptly-named “Baguette-One”, received more funding from the French government to continue developing a low-cost hybrid rocket engine. Baguette One should take flight in the beginning of 2026 and aims to put small satellites up to 250 kilograms into orbit. (ANS thanks The Orbital Index and LeMonde for the above information)

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Mark Johns, KØJM
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